

## SAFETY DATA SHEET

Version 8.5  
Revision Date 02/08/2023  
Print Date 02/28/2023

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Mayer's hemalum solution for microscopy

Product Number : 1.09249

Catalogue No. : 109249

Brand : Millipore

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : In vitro diagnostic reagent, Reagent for analysis

**1.3 Details of the supplier of the safety data sheet**

Company : EMD Millipore Corporation  
400 Summit Drive  
BURLINGTON MA 01803  
UNITED STATES

Telephone : +1 800-645-5476

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302

Eye irritation (Category 2A), H319

Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal Word

Warning

Hazard statement(s)

H302

Harmful if swallowed.

H319

Causes serious eye irritation.

H373

May cause damage to organs (Kidney) through prolonged or

repeated exposure if swallowed.

Precautionary statement(s)

P260	Do not breathe mist or vapors.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/ attention if you feel unwell.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Component		Classification	Concentration
<b>ethylene glycol</b>			
CAS-No.	107-21-1	Acute Tox. 4; STOT RE 2; H302, H373	>= 20 - < 30 %
EC-No.	203-473-3		
Index-No.	603-027-00-1		
Registration number	01-2119456816-28-XXXX		
<b>aluminium sulfate</b>			
CAS-No.	10043-01-3	Met. Corr. 1; Eye Dam. 1; H290, H318	>= 1 - < 5 %
EC-No.	233-135-0		
Registration number	01-2119531538-36-XXXX		

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

**In case of eye contact**

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

**If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Sulfur oxides

Aluminum oxide

Mixture with combustible ingredients.

Development of hazardous combustion gases or vapours possible in the event of fire.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

## 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Tightly closed.

Recommended storage temperature see product label.

#### Storage class

Storage class (TRGS 510): 10: Combustible liquids

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
ethylene glycol	107-21-1	TWA	25 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Not classifiable as a human carcinogen		
		STEL	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Not classifiable as a human carcinogen		
		STEL	10 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		Not classifiable as a human carcinogen		

		C	50 ppm 125 mg/m3	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
		C	40 ppm 100 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
aluminium sulfate	10043-01-3	TWA	2 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	2 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

## 8.2 Exposure controls

### Appropriate engineering controls

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### Body Protection

protective clothing

#### Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                                 |                                       |
|---------------------------------|---------------------------------------|
| a) Appearance                   | Form: liquid<br>Color: reddish-violet |
| b) Odor                         | odorless                              |
| c) Odor Threshold               | Not applicable                        |
| d) pH                           | No data available                     |
| e) Melting point/freezing point | No data available                     |

f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	No data available
l)	Vapor density	No data available
m)	Density	1.05 g/cm <sup>3</sup> at 20 °C (68 °F)
	Relative density	No data available
n)	Water solubility	soluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Autoignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	Not classified as explosive.
t)	Oxidizing properties	none

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

The generally known reaction partners of water.

Risk of explosion with:

Aluminum

perchloric acid

Risk of ignition or formation of inflammable gases or vapours with:

chromyl chloride

Strong oxidizing agents

chlorates

Peroxides

potassium permanganate

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Exothermic reaction with:  
chlorosulfonic acid  
Sodium hydroxide  
fuming sulfuric acid  
sulfuric acid  
Violent reactions possible with:  
The generally known reaction partners of water.

#### **10.4 Conditions to avoid**

no information available

#### **10.5 Incompatible materials**

various plastics

#### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

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### **SECTION 11: Toxicological information**

#### **11.1 Information on toxicological effects**

##### **Mixture**

##### **Acute toxicity**

Acute toxicity estimate Oral - 1,900 mg/kg  
(Calculation method)

Symptoms: Possible symptoms:, mucosal irritations

Acute toxicity estimate Dermal - > 5,000 mg/kg  
(Calculation method)

##### **Skin corrosion/irritation**

No data available

##### **Serious eye damage/eye irritation**

Remarks: Mixture causes serious eye irritation.

##### **Respiratory or skin sensitization**

No data available

##### **Germ cell mutagenicity**

No data available

##### **Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

##### **Reproductive toxicity**

No data available

##### **Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Mixture may cause damage to organs through prolonged or repeated exposure.

- Kidney

**Aspiration hazard**

No data available

**11.2 Additional Information**

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

**Components****ethylene glycol****Acute toxicity**

LD50 Oral - 500.1 mg/kg

Oral: (Regulation (EC) No 1272/2008, Annex VI)

LC50 Inhalation - Rat - male and female - 6 h - > 2.5 mg/l - aerosol

Remarks: (ECHA)

LD50 Dermal - Mouse - male and female - > 3,500 mg/kg

Remarks: (ECHA)

No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 20 h

Remarks: (ECHA)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation - 24 h

Remarks: (ECHA)

**Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Species: Rat - male and female

Result: negative

**Carcinogenicity**

This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

**Reproductive toxicity**

Laboratory experiments have shown teratogenic effects.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

**Specific target organ toxicity - single exposure**

No data available



**Specific target organ toxicity - repeated exposure**

Oral - May cause damage to organs through prolonged or repeated exposure.

- Kidney

**Aspiration hazard**

No data available

**aluminium sulfate****Acute toxicity**

LD50 Oral - Rat - male and female - > 2,000 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rabbit - male and female - > 5,000 mg/kg

(OECD Test Guideline 402)

No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Irreversible effects on the eye

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: negative

(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: negative

Test Type: Micronucleus test

Test system: Human lymphocytes

Result: negative

Method: OECD Test Guideline 474

Species: Rat - male and female

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: aluminium hydroxide

Species: Rat

Remarks: Cytogenetic analysis

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

## Specific target organ toxicity - repeated exposure

### Aspiration hazard

No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Mixture

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

No data available

#### Components

##### ethylene glycol

Toxicity to fish	static test LC50 - Pimephales promelas (fathead minnow) - > 72,860 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	IC5 - Scenedesmus quadricauda (Green algae) - > 10,000 mg/l - 7 d Remarks: (Lit.)
Toxicity to bacteria	static test EC20 - activated sludge - > 1,995 mg/l - 30 min (ISO 8192)
Toxicity to fish(Chronic toxicity)	flow-through test LC50 - Menidia peninsulae (tidewater silverside) - > 1,500 mg/l - 28 d Remarks: (in analogy to similar products) (ECHA) The value is given in analogy to the following substances: triethylene glycol

##### aluminium sulfate

Toxicity to fish

semi-static test LC50 - Danio rerio (zebra fish) - > 87.5 mg/l -

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	96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 200 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (microalgae) - 0.24 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	static test EC50 - activated sludge - > 200 mg/l - 3 h (OECD Test Guideline 209)
Toxicity to fish(Chronic toxicity)	semi-static test NOEC - Salvelinus fontinalis (Brook trout) - 0.024 mg/l - 60 d Remarks: (ECHA)
	semi-static test NOEC - Salvelinus fontinalis (Brook trout) - 0.024 mg/l - 60 d Remarks: (ECHA)
	semi-static test NOEC - Salvelinus fontinalis (Brook trout) - 0.024 mg/l - 60 d Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test NOEC - Ceriodaphnia dubia (water flea) - 3.8 mg/l - 8 d (US-EPA)

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

#### DOT (US)

Not dangerous goods

#### IMDG

Not dangerous goods

#### IATA

Not dangerous goods

**Further information**

Not classified as dangerous in the meaning of transport regulations.

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**SECTION 15: Regulatory information****SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
ethylene glycol	107-21-1	2007-07-01

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
water	7732-18-5	
	107-21-1	2007-07-01
ethylene glycol		
	10043-01-3	1993-02-16
aluminium sulfate		

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
ethylene glycol	107-21-1	2007-07-01
aluminium sulfate	10043-01-3	1993-02-16

**California Prop. 65 Components**

, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).ethylene glycol

CAS-No.	Revision Date
107-21-1	2015-06-19

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## SECTION 16: Other information

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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